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Original Articles

FOUR CASES OF TETANUS TREATED BY CARBOLIC ACID INJECTIONS AT THE ST. LOUIS CITY HOSPITAL.

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IN presenting the following cases of tetanus and the treatment employed, our aim will be to detail every step of the progress in each case so that every change may be clearly brought out, both in those changes which would be expected as a possible occurrence in the disease itself, and also those changes which were probable as the result of the treatment used.

Many cases of tetanus have been reported as having been treated with carbolic acid in which a recovery was the final result, but there is only one case in which carbolic acid injections were used and in which the patient did not receive any benefit, but finally died. Ascoli reports this case, and gave as his reason for this result that too small an amount of carbolic acid was given. This reason does not hold good in every case, however, for in the first three cases treated at this institution the amount of carbolic acid used from the beginning was larger than that given by Ascoli in those cases which he reported to have recovered; yet our three cases died. It seems that there has not been enough care in reporting the cases of tetanus treated with carbolic acid, for there has not been a complete and tabulated report of every step employed, with the exception of that of Dr. Flavel A. Wood, of Philadelphia. It has therefore been almost impossible to ascertain the approximate large or small amount of carbolic acid to be used at the beginning, and how often injections could be given, and to what amount the doses could be increased (within certain limits) without causing untoward symptoms relative to the carbolic acid itself.

According to Dr. Horatio C. Woods, in his article in *Merck's Archives* of May, 1899, in which he quotes Baccelli's original method, the following is the procedure:

"The subcutaneous injections of a 2 per cent. solution of carbolic acid should be given at two or three hour intervals; if the case is one of only moderate severity, commencing doses of about three grains in the twenty-four hours may be used. This dose should be rapidly increased to at least double or triple the quantity."

Ascoli is credited with having stated in an article appearing in *Merck's Archives* of April, 1899, "that carbolic acid is injected in from $\frac{9}{20}$ to $\frac{3}{5}$ of a grain in a 2 to a 3 per cent. solution several times within the twenty-four hours. In some cases as much as $5\frac{1}{4}$ grains have been administered in a single day, and no signs of intolerance appeared." In the same article he refers to Liengo as having had a case of tetanus in which he had injected nearly 147 grains of carbolic acid in twenty-seven days, or an average of nearly $5\frac{1}{2}$ grains per day. During this period no untoward symptoms were present.

Dr. Arthur Eddowes of Loughborough, Leicestershire, England, reports in the *Lancet* of January 16th, 1897, a case of tetanus in which he used carbolic acid injections of 5 minims of a 2 per cent. solution, given morning and evening. In addition to this 10 grains of chloral and bromid of potassium were given every two hours. The bromid and chloral were gradually reduced in frequency at the end of the fifth day, the dose being 15 grains of chloral, the bromid of potassium having been discontinued. He also discontinued the injections of carbolic acid on the fifth day. This case made an uninterrupted recovery.

The above extracts from the reports by those physicians experimenting with carbolic acid in the treatment of tetanus will serve to introduce the reader to a few facts connected with this treatment other than those which are in our report.

The experience of those in attendance at the St. Louis City Hospital is somewhat different from that reported in regard to the amount of carbolic acid used at the beginning and during the course of this disease in our patients, in that the amount of carbolic acid recommended by the above named physicians is very much smaller than that given at this institution. In the first three cases, which died, the doses, with the exception of that of the first, were much larger from the beginning, and at the time of their demise were from three to four grains per day larger than the doses heretofore recommended. In the fourth case, which recovered, 99 grains of carbolic acid were injected during the first twenty-four hours without producing any untoward effects of any kind. The explanation of the safety with which such large amounts of carbolic acid can be given lies in the fact that the toxins of the tetanus bacillus and carbolic acid are di-

rect antidotes of one another, each neutralizing the toxic effect of the other.

Dr. Flavel A. Woods of Philadelphia reports in the *New York Medical Journal* of the second week of September a case of tetanus treated with carbolic acid, in which he used large doses from the beginning; these were continued during the course of the disease and without producing any untoward effect; this patient recovered. His experience coincides with ours, in that the disease was controlled from the start, which was not the result where a smaller dose was used from the beginning.

The following histories and tabulated notes will serve better than words to illustrate the cases, the treatment and the incidents occurring during their course.

Case I. August B——, æt. 17, laborer, single; admitted June 22, 1899.

Habits.—Does not chew, drink or smoke.

Family History.—Father dead, cause of death said to have been renal calculi; mother living and well; no brothers or sisters.

Previous Diseases.—Scarlet fever, malaria.

Present Condition—Was playing with toy pistol when shell exploded and part of it entered hand, causing a slight wound of ball of thumb. Patient came in Wednesday evening, and hand was dressed, but he would not stay. Came in again this evening with hand badly swollen and painful; wound was enlarged, curetted and carbolic pack applied.

Pulmonary, circulatory, urinary and nervous systems apparently normal.

June 30th. Condition of patient improved, condition of hand improved.

July 3d. Last night patient noticed that his neck and back was somewhat stiff and painful; this morning his lower jaw became very rigid; there were also slight contractures of the muscles of both arms; patient's neck and spinal column are very stiff; he is unable to bend his body, and any effort to do this gives him considerable pain; at times he also complains of occipital and frontal headache.

Urinalysis did not reveal anything abnormal.

July 3rd. Rigidity of muscles of back and neck, slight trismus and opisthotonos, abdominal muscles relaxed, deglutition not impaired.

July 4th. Frequent spasms of short duration, abdominal muscles rigid, trismus and opisthotonos.

July 5th. Great pain of back, opisthotonos, trismus, frontal headache.

July 6th. At 2:00 A. M. had a severe convulsion of muscles of respiration, became very cyanosed; masseters were extremely rigid; opisthotonos. Attack lasted about ten minutes, pulse 130. Had a milder attack at 8:00 also at 10:00 A. M.

July 7th. Rested somewhat during previous night, frequent tonic spasms, opisthotonos, trismus pronounced, abdominal muscles rigid. At 11:55 A. M. patient has a severe convulsion; there were a marked cyanosis, opisthotonos, tonic and tetanic convulsions. Patient died during latter part of convulsion.

In addition to the carbolic acid injection the following was given:

Potassium bromid, gr. xlviij, and chloral, gr. xxiv, every three hours. Patient was kept upon a liquid diet.

The following table gives the record of carbolic injection in full:

(AUGUST B——.) CARBOLIC ACID INJECTIONS. (2% SOLUTION.)

DATE	TIME	AM'T GIVEN	REMARKS	URINALYSIS.
July 3,	12 M.	1/30 gr.	Rigidity of muscles of back and neck, slight trismus and opisthotonos; abdominal muscles relaxed; deglutition not interfered with.	Urine pale and apparently normal; no carbolic acid present.
" 3,	2 P.M	1/30 "		
" 3,	6 "	1/30 "		
" 4,	12 M.	1/30 "	Frequent spasms of short duration; abdominal muscles rigid; trismus and opisthotonos.	Urine normal.
" 4,	9 A.M.	1/15 "		
" 4,	12 M.	1/15 "		
" 4,	6.45P.M.	1/15 "		
" 5,	12 M.	1/15 "	Great pain in back; marked opisthotonos; muscles of upper extremities contract more during the paroxysms than do the lower extremities.	Urine pale color; increased in amount of phosphates.
" 5,	9 A.M.	1/12 "		
" 5,	12 M.	1/12 "		
" 5,	7 P.M.	1/12 "		
" 5,	8 "	2 grs.		
" 6,	12 M.	2 "	At 2 A. M. patient had a severe spasm of the muscles of respiration, and became cyanotic; attack lasted about 10 m. (had a milder attack at 8 P. M., also at 10 A. M.)	Urine dark color; acid reaction, sp. gr. 1024; small amount albumen; no casts; urine later during the day contained no albumen.
" 6,	6 A.M.	2½ "		
" 6,	1 "	2½ "		
" 6,	7 "	2½ "		
" 6,	12 M.	2½ "	Rested somewhat during previous night; frequent tonic spasms.	Urine darker in hue and having a peculiar salol-like odor; acid reaction, sp. gr. 1038; phosphates increased in amount; ammonium urates present; slight amount of albumen present; no sugar present; no casts found; carbolic acid in urine.
" 6,	9 P.M.	3½ "		
" 7,	12 M.	3½ "		
	84 hours	21½ grs.		

In this case the amount of carbolic acid given in each dose was too small at the beginning. Fifty-four hours after commencing the injections, the doses were increased to 2 grs., given as indicated on the chart.

Case II. Frank R——, æt. 10; admitted July 10, 1899.

Habits.—Good.

Family History.—Father died at 45, from abscess of liver; mother died at 42 of pneumonia; four sisters and two brothers died during infancy; cause of death unknown; one brother and one sister living and healthy.

Previous Diseases.—Has never had any previous diseases.

Present Disease.—One week ago to-day—July 4th—patient accidentally received a gunshot wound, located on inner palmar surface of left hand. Wound ragged, about 1½ inches long, extending from the head of the fourth metacarpel bone to about the middle of the third metacarpal bone. After receiving injury patient went to dispensary daily and had his hand dressed. At noon, July 10th, patient first noticed the symptoms of his present disease; when attempting to open his mouth there was a painful stiffening of the muscles. When first seen he could separate his teeth sufficiently to protrude only the tip of his tongue; there existed stiffness of the cervical and maxillary muscles, trismus, and difficulty of deglutition.

Examination of the wound showed the surrounding tisue to be greatly infiltrated, boggy, and edematous, and from the wound flowed a thick yellowish-gray purulent matter. The boggy tissues were incised, curetted, cauterized with 95 per cent. carbolic acid, thorough drainage established, and dressed. Hypodermics of 2 per cent. carbolic acid solution were administered.

July 11th. To-day the trismus is about the same as yesterday, abdominal muscles are rigid, difficulty in opening mouth, inability to swallow, head and neck fixed by spasms of the dorsal muscles and pain in back and occiput.

Circulatory Apparatus.—Heart lesions not found, pulse was irregular, rapid and weak.

Urinalysis.—High colored, acid reaction, specific gravity 1038, no albumin, no sugar.

July 12th. This A. M. patient was extremely restless, very frequent spasms of short duration; patient complained of very severe abdominal pain at about 2:00 A.M., catherization giving him some relief. Pulse about 160, tachycardia, equalization of systole and diastole, heart very weak, respirations increased in frequency (dyspnea) to 40. A violent convulsion at 4:00 A. M., profuse sweating. During the night frequent convulsive attacks brought about by jarring of bed, noise, light, etc.

Patient died at 6:15 A. M., temperature going up to 104.6° before death.

In addition to carbolic acid injection the following was given:

Potassium bromid, gr. xlviij., and chloral, gr. xxiv. every three hours, and the patient was put on a liquid diet.

Details of the case:

CARBOLIC ACID INJECTIONS.

(FRANK R——.) (2% SOLUTION.)

DATE	TIME	AM'T GIVEN	REMARKS
July 10,	8.45 P.M.	1 gr.	Urinalysis — Morning urine
" 10,	11.45 "	1 "	(single specimen): High
" 11,	2.45 A.M.	1 "	color; acid reaction; sp. gr.
" 11,	5.45 "	1 "	1038: no sugar, albumin or
" 11,	9 "	1 "	casts; test for carbolic acid
" 11,	12 "	1 "	negative.
" 11,	3 P.M.	1 "	Evening specimen of urine:
" 11,	6 "	1 "	High color and reaction, sp.
" 11,	9 "	1¼ "	gr. 1040; no sugar, albumin
" 12,	12 M.	1¼ "	or casts; test for carbolic acid
" 12,	3 A.M.	1¼ "	negative.
	30¼ hours	11¾ grs.	

The doses from the beginning were larger than that recommended by Ascoli; yet no apparent benefit was obtained.

Case III. Henry C—— (cld.), æt 26, laborer, married; admitted August 20th, 1899.

August 21st. This man was brought in yesterday afternoon, having convulsions of tetanus. Seven days previous he had been shot in left leg, bullet entering anterior aspect of leg three inches above ankle joint. His muscles of mastication were in constant spasm.

Examination showed all muscles more or less rigid during spasms, muscles in continuous and firm spasmodic contraction, marked retraction of head, extreme irritability, any irritation producing a spasm, conscious and apparently rational and able to talk a little with his teeth tightly clamped, unable to swallow, risus sardonicus present, no opisthotonos, but orthotonos during spasms. The wound was opened and curetted and also cauterized with pure carbolic acid; carbolic acid injections were instituted; amounts given and time given are noted on attached table. In addition, rectal injections of potassium bromid 48 grs., and chloral 24 grs. and whisky 10 c.c. were given every three hours, and hypodermics of aromatic spirits of ammonia 1 c.c. and tr. digitalis 5 gtt. every two hours. This treatment was continued to the end, with the exception that the amount of carbolic acid was reduced this morning, as indicated on chart. The urinalysis yesterday showed normal urine. This morning neither albumin nor carbolic acid were found in urine. Wound was dressed and irrigated again this morning.

Condition of patient continued about the same during the evening, the spasms coming on not very frequently and not of a sufficiently severe type to indicate chloroform. Saw patient every hour up to 2:00 A.M.; no marked change in condition. At 4:00 A.M. he had a very severe convulsion, orthotonos, depression of chest, difficulty in respiration, weak, thready

pulse, frothing at mouth. Gave him a little over a dram of chloroform and ¼ gr. of morphin; convulsion relieved, relaxation of muscles, patient rested well for a time. By 8:00 severe convulsions had again ensued and chloroform was given again. By a little after 9:00 severe spasms were occurring every 10 or 15 minutes, lasting three to five minutes. Chloroform henceforth given at intervals. Spasms kept growing more frequent until they occurred every two minutes or less, frothing increased, marked orthotonos and opisthotonos then set in, spasms soon became almost continuous, only intermitting for short intervals; during spasms pulse weak and intermittent and gradually growing weaker, respiration shallow and at times almost nothing. Just before noon extremities became cold. At 12:05 P.M. heart's action suddenly ceased, a few more efforts were made by muscles of respiration; corneal reflexes were lost at once when heart's action ceased.

CARBOLIC ACID INJECTIONS.

(HENRY C——.) (2% SOLUTION.)

DATE	TIME	AM'T GIVEN	URINALYSIS
Aug. 20,	7 P.M.	1 gr.	
" 20,	9 "	1 "	Urine normal.
" 20,	11 "	1 "	No change in patient's condition.
" 21,	1 A.M.	1 "	
" 21,	3 "	1 "	No change in patient's condition.
" 21,	5 "	1 "	
" 21,	7 "	1 "	No change in patient's condition.
" 21,	9 "	½ "	No albumin, sugar, casts, nor carbolic acid present in urine.
" 21,	11 "	½ "	
	16 hours	8 grs.	

The reason why the amount of carbolic acid was reduced in the last two doses, was the fact that the amount which had heretofore been recommended as the maximum amount for the 24 hours would have been largely exceeded; so it was thought best to reduce the amount so as to make the 24 hours' amount more nearly correspond to that recommended (which was 5½ grs.).

Case IV. John B——, aet. 22, laborer, married; admitted September 14, 1899.

Habits.—Drinks in moderation, smokes to excess.

Family History.—Negative.

Previous History.—Has been doing very heavy work at digging in a ditch. Has an ulcer on left leg; says he had ulcer bandaged while working. First noticed pain in hip, which gradually went up the small of his back and down his legs; this was two weeks ago. For the last week has had spasms, during which he would straighten out, and at present has opisthotonos; he is hyperesthetic; his reflexes exaggerated; tapping on patellar tendon produces spasms; jaws are somewhat stiff, pupils dilated.

Circulatory system seems normal. Respiratory system, impossible to make a satisfactory examination; says he "smothers easily." Could not get specimen of urine.

Diagnosis.—Tetanus, probably seat of infection, ulcer of leg.

Patient put upon injections of carbolic acid as per bedside notes, wound (ulcer of leg) cleaned, cauterized with 95 per cent. carbolic acid, and dressed with 25 per cent., and over this 5 per cent. solution.

Symptoms.—Pain and stiffness of neck, back, jaw stiffened, risus sardonicus; legs stiffened, especially the right, which cannot be bent at all; tapping patellar tendon produces spasm; spasm of all the muscles of body while cleaning wound; slight exertion causes profuse perspiration; mind clear. He is unable to chew his food and complains of some difficulty in swallowing.

Urinalysis.—Taken before giving carbolic acid; color, light straw; flocculent white precipitate, faintly acid, specific gravity 1026, no albumin, no sugar.

September 16th. Risus sardonicus not so pronounced, no spasm on tapping patellar tendon; can bend legs, stiffness not so great; back muscles very rigid, however.

Urinalysis.—5:30 A. M., urine clear, but slightly darker, flocculent precipitates, faintly acid, large amount of phosphates, specific gravity 1032, no albumin, no sugar, ferric chlorid test for carbolic acid positive.

2:00 P. M., dark greenish yellow, almost no sediment, more acid in reaction, specific gravity 1030, no albumin, carbolic acid test positive.

8:30 P. M., no albumin; patient says he feels better.

9:30 A. M., September 17th, amount 350 cc., clear, greenish yellow, specific gravity 1034, reaction very acid, no albumin, large amount of earthy and alkaline phosphates; carbolic acid present, but not so large amount as at 2:00 P. M. yesterday.

September 18th. No albumin, carbolic acid present; there is still marked stiffness and a "catch" sometimes.

September 19th. 8:30 P. M., cloudy, transparent, amber color, specific gravity 1034, acid reaction, white precipitate on standing, no albumin, excess of phosphates, carbolic acid present.

September 20th. Total amount on 19th, 1050 c.c. Clear, acid reaction, not so mild as formerly, no albumin, excess of phosphates, carbolic acid present; stiffness gradually lessening.

September 21st. 5:00 P.M., specific gravity 1024; no albumin.

September 22d. No albumin.

September 23d. Says he feels no more stiffness, carbolic acid injections discontinued. Urine clear amber, acid reaction, specific gravity 1017, no albumin, no sugar. Up to present time solution of bromid and chloral (1 c.c. contains potassium bromid gr. iij and chloral gr. iss); 15 c.c. have been given five times in 24 hours.

September 24th. Thirty minims of a 10 per cent.

carbolic acid solution, given with glycerine and water by mouth six times in the 24 hours; bromids and chloral lessened to 10 c.c., five times daily. Urine faintly acid, no albumin.

September 28th. Urine light straw, slightly cloudy, flocculent white precipitate, specific gravity 1022, acid, no albumin, no sugar. Condition continues to improve; he seems hungry all the time and wants more to eat.

September 30th. Wound on leg is now healing, the skin having been somewhat macerated by carbolic acid applications. Condition remains good and patient does not complain of stiffness. Urine straw colored, slightly cloudy, slight white precipitate, fresh urine strongly alkaline, specific gravity 1020, no albumin, no sugar, carbolic test positive. Present treatment; carbolic acid 10 per cent., m. 30; glycerine, m. 40; aqua dist., m. 30; six times daily; bromid and chloral solution, c.c. 10, six times daily, but omitted at night if sleeping. Bowels are regular, appetite good.

October 3d. Patient sitting up to-day.

October 4th. Carbolic acid discontinued; a little tonic, and bichloride of mercury was given instead.

October 5th. Patient can stand erect with a little encouragement.

October 6th. Dry dressing to old wound.

October 11th. For last 11 days has complained of epigastric pain (muscular) and stiffness, which has however lessened gradually. He now walks about ward, waits on himself, does a little odds and ends of detail duty, and is feeling good. Tonic treatment continued.

October 15th. Makes no complaints now of pains, feels well in every way, no trouble in ambulation, but has an awkward gait. Urinalysis did not reveal anything abnormal.

October 16th. Wants to go out, and request granted.

Full details of the case are given in the table submitted.

(J. A——). CARBOLIC ACID INJECTIONS. (10% SOLUTION.)

DATE	TIME	TEMP.	PULSE	RESP.	AM'T GIVEN	RECORDS FROM THE ATTENDING NURSE
Sept. 15,	8:30 P.M.				10 drops.	
" 15,	8:45 "				20 "	
" 15,	9:00 "	100.2	96	36	30 "	Bromid and chloral solution.
" 15,	9:30 "				30 "	
" 15,	10:00 "				30 "	Resting quietly.
" 15,	10:30 "				30 "	
" 15,	11:00 "				30 "	Sleeping.
" 15,	11:30 "				30 "	Four ounces milk taken per orem.
Sept. 16,	12:00 M.	98 2	60	24	30 "	Awake, but resting quietly.
" 16,	12:30 A.M.				30 "	Sleeping.
" 16,	1:00 "				30 "	1:15 A.M. Awake and complaining of pain in neck.
" 16,	1:30 "				30 "	Sleeping.
" 16,	2:00 "				30 "	Sleeping.
" 16,	2:30 "	98 2	80	24	30 "	Passed 10 ounces urine.
" 16,	3:00 "				30 "	Six ounces of milk per orem.
" 16,	3:30 "				30 "	Resting quietly and sleeping.
" 16,	4:00 "				30 "	Resting quietly and sleeping.
" 16,	4:30 "				30 "	Sleeping.
" 16,	5:00 "				30 "	Sleeping.
" 16,	5:30 "				30 "	Awake, but resting quietly.
" 16,	6:00 "	98.2	76	24	30 "	Awake, but resting quietly.
" 16,	6:30 "				30 "	Resting quietly.
" 16,	7:00 "				30 "	Discontinued injections.
" 16,	7:30 "				30 "	Discontinued injections.
" 16,	8:00 "				30 "	Discontinued injections.
" 16,	8:30 "				30 "	Four ounces milk taken per orem.
" 16,	9:00 "	99 2	72	24	30 "	Resting quietly, but awake.
" 16,	10:00 "				30 "	Sleeping.
" 16,	10:30 "				30 "	Four ounces milk taken per orem.
" 16,	11:00 "				30 "	
" 16,	11:30 "				30 "	Four ounces milk taken per orem.
" 16,	12:00 M.				30 "	Slight spasmodic contractions of the muscles when awakened
" 16,	12:30 P.M.				30 "	
" 16,	1:15 "					Bromids and chloral. Resting quietly.
" 16,	1:45 "					Catheterized; 350 c.c. urine. Four ounces milk per orem.
" 16,	2:30 "				30 "	Perspiring freely while sleeping.
" 16,	3:00 "	99.6	64	20		Four ounces milk per orem.
" 16,	4:00 "					Four ounces milk per orem.
" 16,	4:30 "				30 drops.	Resting quietly and sleeping at intervals.
" 16,	6:30 "				30 "	Sleeping
" 16,	8:30 "				30 "	Four ounces milk per orem.
" 16,	9:00 "					Bromids and chloral
" 16,	10:30 "				30 "	Passed 12 ounces urine.
" 17,	12:00 M.	99.6	72	20		Four ounces milk taken per orem.
" 17,	12:30 A.M.				30 drops.	Perspiring freely. Sleeping quietly.
" 17,	2:00 "					Six ounces milk per orem.
" 17,	2:30 "	99.6	84	20	30 drops.	Sleeping quietly.

(J. A——). CARBOLIC ACID INJECTIONS—CONTINUED. (10% SOLUTION.)

DATE	TIME	TEMP.	PULSE	RESP.	AM'T GIVEN	RECORDS FROM THE ATTENDING NURSE
Sept. 17,	4:30 A.M.	99.6	72	18	30 drops.	Slight spasmodic contraction of muscles.
" 17,	6:30 "				30 "	Awake, but quiet.
" 17,	8:30 "				30 "	Six ounces milk per orem.
" 17,	10:30 "				30 "	Voided 350 c.c. urine.
" 17,	12:30 P.M.				30 "	
" 17,	2:30 "				30 "	Resting quietly.
" 17,	4:30 "					Resting quietly.
" 17,	6:30 "	100.2	80	20	30 drops.	Resting quietly.
" 17,	8:30 "				30 "	Six ounces of milk per orem.
" 17,	9:00 "					Bromids and chloral.
" 17,	10:30 "				30 drops.	Voided 350 c.c. urine.
" 18,	12:30 A.M.	99	88	20	30 "	Six ounces milk per orem.
" 18,	2:30 "	98.6	76	18	30 "	Resting quietly, and sleeping.
" 18,	4:30 "				30 "	
" 18,	6:30 "	98	72	20	30 "	No stools during night.
" 18,	8:30 "				30 "	Perspiring freely.
" 18,	10:30 "				30 "	
" 18,	2:30 P.M.				30 "	Catheterized 250 c.c. urine.
" 18,	4:30 "				30 "	
" 18,	6:30 "				30 "	Resting quietly.
" 18,	8:30 "				30 "	
" 18,	10:30 "				30 "	Bromids and chloral.
" 19,	12:30 M.				30 "	
" 19,	4:30 A.M.				30 "	Rested quietly all night.
" 19,	8:30 "	98.6	96	24	30 "	
" 19,	10:30 "				30 "	Sleeping. Bromids and chloral given once.
" 19,	12:30 P.M.				30 "	
" 19,	2:30 "				30 "	
" 19,	4:30 "				30 "	
" 19,	6:30 "				30 "	Rested well all night.
" 19,	10:30 "				30 "	
" 20,	2:30 A.M.				30 "	Sleeping. Bromids and chloral given twice.
" 20,	6:30 "				30 "	
" 20,	10:30 "				30 "	
" 20,	2:30 P.M.				30 "	Resting well.
" 20,	6:30 "				30 "	Resting well.
" 20,	10:30 "				30 "	
" 21,	2:30 A.M.				30 "	Resting well.
" 21,	6:30 "				30 "	
" 21,	10:30 "				30 "	
" 21,	2:30 P.M.				30 "	Resting well.
" 21,	6:30 "				30 "	
" 21,	10:30 "				30 "	
" 22,	2:30 A.M.				30 "	Resting well.
" 22,	6:30 "				30 "	
" 22,	10:30 "				30 "	
" 22,	2:30 P.M.				30 "	
" 22,	6:30 "				30 "	
" 22,	10:30 "				30 "	
" 23,	2:30 A.M.				30 "	Resting well.
" 23,	6:30 "				30 "	
" 23,	10:30 "				30 "	
" 23,	2:30 P.M.				30 "	Resting well.
" 23,	6:30 "				30 "	
" 23,	10:30 "				30 "	Bedside notes discontinued; patient has been put on carbolic acid and glycerine per orem.

In all, 267 grains of carbolic acid was given by injections, not considering that which was given by mouth.

It would be well to state that Ascoli has reported thirty-four cases of tetanus which have been treated successfully by physicians in different parts of the world. And to this list may be added the case treated successfully by Dr. F. A. Wood and also the one from the St. Louis City Hospital. Ascoli reports one case which did not respond to carbolic acid, while at the St. Louis City Hospital three cases died; making four cases which died under this treatment, while thirty-six recovered.

It is stated of Simon Stylites, a monk and physician who flourished in the fourth century, that in order to avoid the inconvenience attendant upon his great reputation and popularity as master in the healing art, he built a pillar ten feet high and sojourned upon its top, This elevation, not being sufficient to free him from the homage and flattery of his numerous clients, he from time to time added to the pillar's height, until finally for thirty years he lived upon a platform perched a distance of sixty feet from the ground. This is believed to be the only authentic case in history in which innate modesty has driven a physician to such expedients to avoid the praise of his fellow-men. So far as is known to the *Journal of Medicine and Science*, the good Simon has no modern imitators.

Notes and Items

A public sanitarium for nervous diseases has been opened at Zehlendorf, near Berlin. Its work is directed exclusively to the care and treatment of the curable forms of nervous disease. It is the first institution of the kind under State control.

One of the latest explanations of the action of the thyroid gland is that of von Cyon, who states that it is the office of this body to convert iodin into iodothryrin. Upon this theory he bases an explanation of the systemic effect produced by the removal of the gland, and the effect of over-action and an over-production of thyroidin upon the heart and blood vessels.

Recently a traveling agent of Fairchild Brothers & Foster went to Portland, Maine, and wrote prescriptions for the essence of pepsin, directing the preparations supplied by that house. It was learned that several druggists substituted other than what was named in the prescription. With the data in hand, he proceeded to call upon the physicians in Portland, acquainting them with the names of the druggists who were willing to substitute.

A shrub which is said to be efficient in the treatment of leprosy, is recently reported from Venezuela. Surgeon-General Wyman has obtained samples and forwarded them to Honolulu, where its cultivation will be undertaken. Dr. Carmichael of the Marine Hospital Service has the matter under his personal charge. There have been so many vaunted cures for leprosy that we fear the results with this newly-discovered plant will not be different from the others. This, however, is no reason why a search for a remedy should be discontinued.

An excursion to the Paris Exposition has been organized by Dr. J. W. Pettit of Ottawa, Illinois. The details of this excursion will be published very soon, the party having been placed in charge of a tourist agency conducted by a Mr. Clark of New York. Already a large number, stated to be upwards of four hundred, have expressed a desire to join the excursion. If a sufficient number can be obtained, the "City of Rome" will be chartered to take the excursion to the other side. Almost all the members, so far, are from the States of Illinois, Iowa and Missouri.

The French investigators believe firmly in the value of the preventive inoculations of serum in restricting the ravages of the plague. It is stated that a considerable quantity of serum has been employed in the epidemic at Santos, the serum having been obtained from the Pasteur Institute at Paris. The results in South America are said to have been quite unsatisfactory. This is attributed by some to the age of the serum, a considerable time having necessarily to elapse for the transportation from Paris to South America. In Oporto, where fresh serum was used, the results are said to have been excellent.

The *New York Medical Times* is authority for the statement of a recent incident in Paris. A woman, with her child, had been suffocated. A physician had been called, who stated that they were both dead, and they were removed to the hospital, where his opinion was confirmed. The house physician, not convinced, began artificial respirations, with insufflations of oxygen, alternated with hypodermic injections of ether. Within three hours signs of life were perceptible, and he finally succeeded in saving both patients. A prominent member of the profession in Paris is authority for the saying: "Never admit as irremediable the death of an individual who has been suffocated, drowned or hanged."

Insanity in the jury box is a matter almost never represented in the annals of medical jurisprudence. There is no record, so far as we know, of a similar case. The Ingham-Newitt trial in Philadelphia recently called forth comment in the *Philadelphia Medical Journal*. The facts show that a member of the jury became violently insane eight days after rendering a verdict, and had to be taken to an asylum. Investigation of the man's antecedents showed that he had suffered from four or five attacks during the past ten years, which have necessitated his incarceration in an asylum and a detention of from three to six months.

A "quack" hospital exists in Michigan. It is named "St. Luke's Hospital," but its methods are anything but those advocated by the evangelist. The hospital appeals to the medical men of the section in which it is located and asks them to become members of the staff. This is easily attained by sending five dollars to the hospital, which binds itself not to make another physician residing in the same place a member of the staff. It further agrees to exploit the fact that the local practitioner chosen to represent the hospital has become a member of the staff, and through him alone patients will be received into the institution. It agrees to divide the fees which are taken from patients with the member of the staff referring them.

Occasionally the physician turns aside from the beaten pathway of the practice of medicine to investigate the drug trade; and occasionally a pharmacist laying the pestle aside, undertakes an investigation of the business relations with the physician. W. A. Robinson, in the presidential address before the Maine Pharmaceutical Association, laid a series of twelve questions before seventy-five leading druggists in the State of Maine. Three of these questions related especially to the relation of the drug trade to physicians. They asked for the extent to which physicians dispense their own medicines. It was stated that physicians generally are dispensing more medicine than formerly, and consequently there is a marked decrease in the prescription business. To the question, "Do

the druggists give the physicians a percentage on the prescriptions filled?" an emphatic "No" was received from most of the druggists, though in a few instances the practice has gained a foothold. It is stated that physicians are in the habit of purchasing largely direct from the pharmaceutical houses, and there is a decided increase in the use of tablet triturates. A few reported a falling off in their use.

The reports from the medical department of the British Army in the Transvaal continue favorable, notwithstanding that a shortage was reported in the number of medical men assigned to some of the last divisions that were sent out. There have been no considerable number of typhoid or dysentery cases. A singular cause of dysentery is described as due to a very fine red earth which is blown about by the winds and finds its way into all packages and in all foods that are not tinned. This substance is said to be very irritating to the intestinal tract and to cause diarrhea, but it is of no great severity. Criticism is being leveled at the military unwisdom of selecting Ladysmith as an entrenched camp. It is believed that the conditions which determined the fortification of this place were those of a political rather than from a military or hygienic standpoint. The place is surrounded by high hills from which it can be commanded by artillery and which shut out the winds. As South Africa is now in the midst of summer, the garrison is thought to be suffering from heat and from a defective, inadequate, and polluted water supply. It is stated that the location of this camp was made without consulting the medical department. The wounded are said to be very efficiently cared for. Two hospital trains under the charge of the Red Cross are now on the grounds and a third will soon be sent out. These rapidly bring the wounded to Durban, from which place they are brought in two hospital ships to Cape Town. Here a hospital sanitorium has been established several thousand feet above the sea level in a most salubrious situation.

Lyddite shells which have been employed with such destructive effect in the war in South Africa, is a derivitive of picric acid. It is stated that the action due to the explosion of these shells is so great that it has been known to kill at a distance of two hundred yards. There is the possibility of suffocation by poisonous gases which the explosion of this substance produces. It is believed that death, when not due to fragments of shell, is due to the terrific concussion. The lay and medical press are filled with descriptions of the terrible destructive effects of modern weapons, and we have just been regaled with an account of the battle at the Modder River, which is said to be the most important engagement in the annals of the British army. We learn from the public dailies that there were some seventy-three killed and about four hundred wounded. In proportion to the number ef troops engaged, this was undoubtedly a destructive battle from a modern standpoint. Compared with the destruction of life in the early ages before the invention of fire-arms, it is comparatively insignificant. A battle in those early days meant the killing of nine-tenths of the defeated army. In a hand to hand conflict, of necessity one soldier sought out another and gave battle. So far as the individual was concerned there were but three outcomes—death, injury, or precipitate retreat. It is easily seen that the destructiveness of modern fire-arms has tended to the preservation of life. The number of fatalities in proportion to combatants has decreased with every improvement in the destructiveness of weapons.

One J. B. W. has written a letter to the *Outlook* in reference to metaphysical healing, in which he discusses the legal status of "divine healers." He says, if Christian science healing does not constitute medical practice, then it must be recognized as a religious exercise which is privileged and protected by the most sacred declarations of the Constitution. He takes up what constitutes neglect in the practice of Christian science, which in the opinion of Christian scientists is to ignore mental treatment and to administer drugs. He discusses the infringement of freedom of faith and individual liberty in which our institutions are grounded.

The *Outlook* admits that the letter in question is as strong a plea as could be made, from the Christian Science standpoint, and in reply it says:

"In most modern communities the principle is recognized that the State has a right to regulate all employment which, for any reason, involve a hazard to the community. On this principle it regulates the sale of dynamite, gunpowder, poisons, and alcoholic liquors; on this principle it forbids men to practice law or medicine, to put up drugs for the sick, or to act as pilots or engineers, without previous special education and training, attested by an official examination. We see no reason why Christian Scientists should claim exemption from this general principle of law. Suppose a Mormon were to set up as a pilot, claim divine guidance, and insist on his right to take steamships in and out of New York Harbor on the strength of his proficiency in the Book of Mormon, would it be a violation of the liberty of the individual to prohibit him and to put him in jail if he persisted? Yet the danger to the community from incompetent pilotage of an ocean steamer would not be so great as the peril from incompetent treatment of certain contagious diseases. Nor does this beg the question of assuming that Christian Science is incompetent treatment. We do not assume that it is incompetent; we assume that the community has a right to determine whether it is competent or not."

MEDICAL REVIEW

A WEEKLY JOURNAL OF MEDICINE AND SURGERY

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END OF VOLUME XL.

With this number the REVIEW closes its fortieth volume. Eight months have passed since the present management assumed charge, and as we look back we find no promise unfulfilled, for beyond the declaration that our best efforts would be exerted none was made. That we have succeeded even beyond the expectation of our friends finds ready confirmation in the growing influence of the journal, and in the broader and more advanced character of its contents. In addition to a largely increased and improved original department, upwards of twelve hundred articles from the foremost medical journals of the world have been reviewed by our staff for Vol. XL., and served to our readers in a tangible and readable manner.

Increased facilities in this respect permit us to promise a more complete review of medical literature for the coming volume. The best journals in English, German, French, Italian, Spanish and Russian will be reviewed in the same careful way that has characterized the REVIEW in the past. Other new features will be announced later.

MEDICAL PEDAGOGICS.

A recent study on the subject of visceral anatomy by the author of "The Abdominal Brain" sums up the subject in the following conclusions: 1. Every college should have a chair of descriptive and applied visceral anatomy. 2, It should continue through the whole course of four years. 3. It should be taught by a practical abdominal surgeon. 4. Animal viscera should be employed the first year. 5. The chair should instruct every senior to perform experiments on the viscera of animals, and each student should perform a certain number himself, killing the animal and performing the autopsy. 6. Such instruction will lessen the amateur and unnecessary abdominal surgery and the slaughter of the genitals which is so prevalent.

This is a fair sample of what is not infrequently urged as a part of the medical curriculum. At a time when medical studies have been lengthened so as to include a period of four years, and even with this length of time at their disposal, the framers of college curricula are at their wits ends to know what to include in the courses of study. Sound educators are generally of the opinion that six hours work a day is about all that can be required, and at most this can cover but about nine or ten months in the year. Within this time must be crowded anatomy, physiology, medical chemistry, materia medica, therapeutics, embryology, surgery, obstetrics, and the practice of medicine. Not only must it include a large amount of practical work in laboratories and dissecting rooms, but we are now told that, in order to prevent "amateur and unnecessary abdominal surgery," we must establish a chair of descriptive and applied visceral anatomy, which shall continue through a whole course of four years. It is to be regretted that the author does not tell us exactly what is to be lopped off from the curriculum in order to provide a space for this new department of "applied visceral anatomy." It is believed by many that operations are often needlessly performed upon the skull for the treatment of epilepsy and other cerebral conditions which are not remediable by surgical intervention. Would not this be avoided by having a chair of applied cerebral anatomy, the course of instruction extending over the entire course of four years? We fail to see wherein the "convolutions of the abdominal brain" are more important than the convolutions of those contained within the cavity of the cranium. Improvement in the medical curriculum should come along the lines laid down by a late famous teacher, which is even more true than when it was uttered: "Surgery is studied by all and practiced by few; obstetrics is practiced by all and studied by few." There was never greater need of pedagogic science in our schools than now.

There is constant clamor for a so-called practical curriculum—one that teaches the manual dexterity and the application of science to the practice of medicine. If there were but few rules and a limited number of procedures, they could easily be included in the ordinary college course. The medical sciences have become so extended that only a limited portion of the field can be covered; hence it is of increasing importance that students should be thoroughly drilled in the basic principles of the science. The ideal medical curriculum of the future will include a teaching of anatomy, physiology, chemistry, and biology, apart from any suggestion of their application to the practical work of the physician in curing disease. With the principles of these sciences, taught by men who pursue them

without thought of their application, we shall have students of medicine who will not need a special professor and four years of drilling to keep them from the "slaughter of the genitals."

THE PLAGUE.

The appearance of the plague in New York has again raised the question of an efficient quarantine against the disorder. The ship in question came from Santos, Brazil, with a cargo of coffee, and developed during the voyage two cases of bubonic plague. The remainder of the crew were placed in a quarantine hospital for observation, and the ship was thoroughly disinfected. The cargo of coffee was taken out and placed upon lighters, and exposed to the action of the air for eight days. The ship and its cargo was then passed by the quarantine officer, but the New York City Board of Health refused to permit the coffee to be landed, claiming that there was no official means of ascertaining that the plague bacillus was destroyed. Since that time two other ships have arrived from the same infected port, laden with coffee, and it is claimed that some eight or ten others are upon the way. This raises the question as to what is necessary to protect from the plague.

The claim is made in Singapore that there has been no authentic case of the plague in that place; this, however, is denied by some. There is no restriction there upon the landing of cargo, though there is a very close inspection of passengers. The studies which have been made at Hamburg show that the plague is rarely, if ever, disseminated by goods or by dust from the holds of vessels. It is claimed by the authorities there, who have made thousands of cultures from the holds of vessels and from cargo arriving from infected ports, that the bacillus of bubonic plague is immediately destroyed by drying, and that dissemination comes solely from persons or from rats or other animals that have contracted the disease. They claim that the cargo of a ship is innocuous, and that all that is necessary is to prevent the escape of animals from an infected ship, or a dissemination of the disease by persons.

MORPHIN HABIT AMONG PHYSICIANS.

The article of Dr. T. D. Crothers to which we referred in a recent issue, in which he gives a statistical study of the prevalence of morphin and alcohol habits among physicians, furnishes a subject of comment to the current issue of the *Homeopathic Envoy*. Among other things, they quote Dr. Crothers as saying "a physician who regularly prescribes morphin for the relief of pain is generally a morphin taker himself. This rule seldom fails. This naturally leads to starting and furthering the habit among the laity."

The *Envoy*, in commenting upon the above, says: "As this was not an attack from others, but was read by a very reputable physician before a respectable body of 'regulars,' it suggests that those who employ homeopathic physicians are wise, for the homeopathic physician has very little need for opiates of any kind; his remedies remove the disease and with it the pain."

The above shows how unskillfully framed sentences may lead to deductions wholly unwarranted by the facts, and oftentimes having no existence in the author's mind. Dr. Crothers, in his attempt to paint the picture of the evils of the morphin and alcohol habits, has laid on the colors in the true impressionist style, with a total disregard of shading.

MEDICINE IN INDIA.

N. S. Rudolf gives an excellent account in the *Bulletin of Pharmacy*, December, 1899, of medicine in India. There, in common with other countries, medicine had its beginnings with the priestly class. In an early Sanskrit work there is found a description of the human body such as could only have been written by one possessing a fairly good knowledge of medicine. In Sanskrit works of even earlier date, names of diseases are given which show that some progress had been made in diagnosis and the classification of disease. Surgery occupied an important place; major operations were undertaken and plastic surgery was cultivated. Hindu medicine flourished between the First Century, B.C., and the Eighth Century, A.D. Operations were practiced upon the bodies of lower animals and perhaps even upon the human cadaver. When the religion of Buddha was supplanted by modern Hinduism with its burdensome caste system, the practice of medicine ceased among the priests and was taken up by a lower class of men. All of the works written in Sanskrit were closed to these men, and their accumulated knowledge finally consisted merely of tradition. While the works of earlier writers were thus lost to Indian medicine, the Sanskrit works were finally translated into Arabic and were carried into Europe by Arabian physicians, who bore such a high reputation for skill and enlightenment From the Eighth Century until the advent of the East Indian Company there was practically no change in the medical practice of India. It is not generally known that the foundation of the Indian empire of Great Britain was laid by a medical man named Hamilton. He at Delhi cured the Emperor Forakshir of a dangerous disease, and took as his reward a grant of three villages near Madras, with the liberty of purchasing in Bengal thirty-seven townships, and conveying their goods through the province duty free. From this small beginning in 1715, the East Indian Company began that course of territorial aggrandizement, which to-day represents the conquest of the entire country and its addition to the British possessions.

Current Medical Literature

DERMATOLOGY AND GENITO-URINARY DISEASES.

The Treatment of Leprosy by Injection of Calmette's Antivenene Serum.—R. S. WOODSON* reports a case of leprosy which he treated successfully with antivenomous serum, which was first introduced by Dyer. The patient was under observation for three months; during two months she was treated by serum therapy, in which time 500 c.c. of serum were used in 47 injections; maximum injection 20 c.c.; minimum 2 c.c. The patient lost the leprous expression. The supraorbital infiltration disappeared. Infiltration which had been present all over her face and ears diminished perceptibly. Her anesthesia disappeared, so that the injections became extremely painful even along the ulnar tract. Nasal discharge ceased, her general health improved, and she gained 14 pounds in weight in 145 pounds. The change in her personal appearance is shown by photographs before and after treatment.

Experience With the Bottini Operation in Hypertrophy of the Prostate.—L. FREEMAN* discusses the symptoms of prostatic hypertrophy, and describes the method of preparing the operation, with a description of the apparatus used. Eight operations are reported; five cases were practically cured, except occasional irritation at the neck of the bladder. One case was much improved, but with residual urine from vesical atony. One case had as much pain and frequent urinations as before the operation, although not a drop of urine remained in the bladder. Epididymitis was the most frequent and annoying complication. It occurred in five cases, and did not develop for a week or more. There was usually much effusion into the tunica vaginalia, with considerable pain, and in three cases suppuration took place. It cannot be doubted that certain cases are better adapted for the Bottini operation than others, and as experience is gained the patients will be selected more intelligently, sometimes one method being employed and sometimes another.

On the Relation Between Diseases of the Kidney and Excretion of the Alloxuric Bodies.—Realizing the importance of estimating accurately the excretion of alloxuric bodies in nephritis on account of the supposed relation between renal diseases and the various symptoms of gout, C. F. MARTIN* examined a number of cases of nephritis of different varieties with this object in view. In carrying out these experiments the patients received each a diet which, while suitable to their condition, was given daily in the same variety and in exact quantity, until they had attained before the experiments were started a nitrogenous equilibrium. Medicinal and other therapeutic agents were for the time rejected. The xanthin bases were estimated by precipitating with silver, and from specimens of the same urine separate tests were made for uric acid by the Ludwig method, and the total nitrogen was estimated daily according to Kjeldahl. For the quantitative analysis of the albumin from day to day, Esbach's instrument was employed. A chart is appended which shows the results of the investigations. The daily excretion of xanthin bases varied between 13.6 and 47 mg. In these cases one could not speak of an absolute increase of xanthin bases in the daily quantity passed. The quantity of uric acid was either normal or slightly below it. Its proportion to the xanthin bases, however, remained unaltered, showing that just as in normal cases so in nephritis the proportions of the uric acid in the alloxuric bodies remain the same, viz.: about 91 per cent., and the total of alloxuric bodies excreted is really lower than the normal.

*Phila. Med. Jour., Dec. 23, 1899.

GYNECOLOGY AND OBSTETRICS.

Hernia in the Female.—T. H. MANLEY.* Hernia in the female in early life is less frequent than in the male; in advanced age it is the reverse. With women it is altogether a more serious infirmity than with men; more incoercible to mechanical supports; more prone to strangulation; and is attended with a larger mortality after kelotomy. Atypical and complicated ruptures are often encountered on dissection. If exomphocele is excluded, there is no evidence that normal pregnancy tends to the development or aggravation of an aperture hernia, and therefore ordinary rupture may be entirely disregarded as constituting any physical impediment to marriage. When intestinal stenosis from hernial obstruction occurs in women the onset is generally more sudden, the symptoms are more acute, more ominous and alarming than in the male, strangulation speedily paralyzing the centres of life, and quickly cutting life short if intervention is not prompt and judicious. The wide, open incision, made early, with the substitution of local cocain analgesia in appropriate cases, will cure many who must otherwise perish, though the only possible means available for preserving life. A large incison through the abdominal walls is no more conducive to a later eventration than a smaller one. The tendency to hernia is dependent upon an improper approximation of the muscles and peritoneum. Every patient laparatomized should for some time after wear a broad, circular support over the abdomen. Feminine hernia of every type, unattended with organic changes, or complicated by serious internal diseases, should be treated by surgical intervention; as this is quite invariably free from danger in the nonstrangulated, and the prospects of permanency in effects are greater than in the male, it may be generally recommended.

*N. Y. Med. Jour, Dec. 23, 1899.

On the Physiologic Character of the Pain of Parturition.—S. M. BRICKNER* thus briefly summarizes his contentions in support of the view that the mode of reproduction in mammals is physiologic: I. What is natural cannot be pathologic. The functions of the uterus are natural, and include the reception of the impregnated ovule, its nourishment and detention until development is complete, and then its expulsion. 2. During the intra-uterine life of the fetus the parturient canal remains closed for the protection of the fetus. Its dilatation at the time of labor is painful because sensitive parts are stretched. The pain is therefore inseparable from parturition. Parturition being natural, it follows that inseparable incidents are also natural. 3. This pain is common to all animals which give birth to their young from a uterus with a placental attachment. 4. Compared with other important functions, parturition is a great rarity. If the commonly reported functions were painful, the species could not continue its existence. There would be no gain in having the vegetative functions painful. The one is in the life of the individual; the other in the life of the species. 5. The uterine contractions are chief among the causes of the pain. Their intermittent character, which provides safety for mother and fetus, proves their physiologic nature. 6. The pain of parturition in the second stage is a stimulant to renewed effort for the expulsion of the fetus. 7. The lack of revivability of the pain in the memory soon after its occurrence, while pain of another character is easily remembered, proves its biologic importance.

INTERNAL MEDICINE.

The Clinical Significance of Fever.—O. T. OSBORNE† describes the normal mechanism of animal heat, and then discusses the pathology of fever. Probably most fevers are due to poisoning from some cause, the character of the fever depending upon the kind of poison. The purest kind of nervous pyrexia is seen in hysteric fever, while a malarial paroxysm is perhaps the best type of immediate stoppage of heat loss. Typhoid is cited as the heat type of a continued fever, and la grippe heads the list of all the irregular and intangible fevers. Before we consider the necessity of lowering the temperature, we should analyze its causes, note the immediate effect on the individual, whether or not dangerous to the organism, consider the probable future of the fever, and also question if this is not nature's method of combating the toxicity of the germ or product. The symptoms of high fever are enumerated, and the cause of each given. If the fever is short-lived no harm can come from it; but if it is a continued one, or even continuous for a few days, the conditions must be analyzed, and each one met by proper treatment. The various remedies and methods employed for the reduction of fever are discussed briefly, and the indications for their employment given.

Four Cases of Pulmonary Tuberculosis.—P. D. BOURLAND* reports four cases which present strikingly the varied symptomatology of pulmonary tuberculosis, and the possibilities in connection with an early diagnosis. A number of conclusions are drawn from them; the first concerns the use of the history in diagnosis. It should always be taken with careful attention to details. It would be better to take no history at all than to use it as negative evidence. The appearance or "habit" of the patient is worthy of more consideration than appears to be accorded to it. This term includes all the points to be gathered from a general inspection, with emphasis on the frame, chest dimensions, development, circulation, degree and quality of nutrition. Misinterpretation of early intrathorosis is not infrequent, and deserves special mention. The importance of early gastric symptoms in early phthisis is illustrated in one case, and less forcily in the other three. The presence of the diazo-reaction should lead to a careful search for its cause. On account of its frequency in tuberculosis its presence should always arouse suspicion. An important point is its possible intermittance from time to time in a given case of tuberculosis. A considerable number of negative sputum examinations do not necesarily indicate the absence of tubercle bacilli. In some cases the use of ammonium chlorid is of value in increasing the quantity of sputum, and in facilitating the clearing of the smaller bronchi, thus furnishing material more likely to contain bacilli and elastic tissue.

A Case of Acute Lymphemia or Acute Lymphatic Leukemia.—W. N. BRADLEY† reports a case of acute lymphemia, which occurred in a boy 8 years old. The patient died in less than eight weeks after the first intimation that he was ill. From the complete report of the case, the following facts are prominent: 1. The cases with which the onset may be mistaken for acute pulmonary tuberculosis. 2. The scrofulous family history. 3. The possible coexistence of tuberculosis. 4. The necessity of careful blood examination. 5. A predominance of the large degenerated lymphocytes seemed to indicate the approach of a fatal ending. 6. The absence of granulation in the leucocytes. 7. The extreme dyspnea was due to enlarged bronchial glands. The number of red blood cells being reduced, the hemoglobin was necessarily reduced, hence the oxygen-carrying power of the blood was diminished. This in turn resulted in a diminished oxygenation of the blood, which acted secondarily on the respiratory centre, producing dyspnea.

*N. Y. Med. Jour., Dec. 23, 1899.
†Phila. Med. Jour., Dec. 23, 1899.

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†N. Y. Med. Jour., Dec. 23, 1899.

SURGERY.

Shortening of the Tibia and Femur.—R. A. HIBBS* reports the results of a study of the shortening of the tibia and femur in fifty cases of tuberculous disease of the hip joint. Their treatment was by the traction method as applied by the long traction hip splint, and the greater part of the time as dispensary patients. The measurement of the femur was taken from the anterior superior spine of the ilium to the line of articulation between the femur and the tibia on the inner side of the knee-joint, and the tibia from this point to the internal malleolus. In sixty-six per cent. there was shortening of both the femur and tibia. The greatest amount of shortening of the femur was found in those cases in which the duration of treatment by traction was shortest in comparison with the duration of the disease. In two cases there was shorting of neither bone, in which the disease had lasted 3 and 4½ years respectively. In two cases there was shortening only of the femur. In two cases there was shortening of the tibia only. In the remaining eleven cases there was shortening of the tibia and lengthening of the femur. It is evident how a measurement of a limb as a whole would give an incorrect impression of the effect of the disease, and emphasizes the importance of measuring these bones separately.

Ligature of the First Portion of the Left Subclavian Artery for Aneurysm; Death After Four Weeks.—F. KAMMERER† describes the operation which was performed on a patient 47 years old. The swelling had been first noticed in the left supraclavicular region about two months before, and had gradually increased in size. There was a history of syphilis contracted twenty years earlier, without secondary or tertiary lesions, and the patient stated that he had received a blow several weeks previous to the appearance of the swelling in that region. The ligature consisted of several pieces of strong chromicized catgut, wound together. The course of the case for the first three weeks after operation was entirely uneventful. Two days after the operation there was faint pulsation at the left radial and sensation in the arm was slightly retarded. Several days later the patient complained of shooting pains in the arm, and there was slight edema of the hand. When the dressings were removed on the nineteenth day, they were found saturated with fresh blood. Hemorrhage persisted, and the patient died from exhaustion on the thirtieth day after operation. At the autopsy it was found that the hemorrhages had been caused by rupture of the artery at the site of the ligature. The loop of catgut had been to a great extent absorbed, especially at the point opposite the tract. The loop had cut through the coats of the artery and almost completely severed the vessel, but it was still lying within the lumen, with the knot outside the vessel. There was no trace of clot on the proximal side.

The Submaxillary Part of the Operation for Epithelioma of the Lip.—C. N. DOWD* calls attention again to the desirability of removing the nodes from beneath the jaw in operations for epithelioma of the lip, and indicates the exact location of the nodes most likely to be infected, and the way of reaching them. At least three localities should be examined to make a proper exploration of these nodes. I. The region above the anterior part of the submaxillary salivary gland. There are regularly two or three nodes here, and they are the ones most commonly affected. II. The space under the chin between the anterior bellies of the two digastric muscles; there are regularly two or three nodes here, and these are the ones next most commonly affected. They are sometimes called the submental nodes. III. The region beneath the border of the jaw about the posterior part of the submaxillary glands; the nodes here are less commonly affected. In addition to these localities, the region of the internal jugular vein should be explored when the submaxillary nodes are decidedly infected. Incisions two and one-fourth to two and one-inches long should be made. They should be beneath the region of the jaw. Scars in this region which are parallel with the jaw border show hardly any tendency toward stretching.

The Simplest and Most Useful Anastomosis Forceps.—A. J. DOWNES† describes the method of procedure in the use of his anastomosis forceps in the end-to-end anastomosis of the bowel. It is simple, practical, and assists in making a properly-sutured end-to-end anastomosis. It is impossible to conceive of a case in which these forceps can be introduced that they cannot be more easily removed. As now made it is a practical and very useful instrument for other purposes than that for which it was originated. It is an excellent sponge-holder, a good cyst-forceps, and tongue-tractor, and will be found a serviceable hemostatic forceps, especially for broad oozing surfaces deep in the pelvis. The forceps and the various stages of the operation in which it is employed are illustrated, showing the method of suturing. For lateral anastomosis, bowel to bowel, or anastomosis of stomach to intestine, the large-sized circular blade may be used, and will enable one to nicely approximate into a circular opening, inch and a half incisions. The lateral anastomosis forceps heretofore advocated may be dispensed with, and the forceps with the incomplete circular blades relied upon to accomplish the same result as effectively and just as quickly.

*N. Y. Med. Jour., Dec. 16, 1899.
†N. Y. Med. Rec., Dec. 23, 1899.

*N. Y. Med. Rec., Dec. 23, 1899.
†Phila. Med. Jour., Dec. 16, 1899.

Pamphlets Received

Sinus Thrombosis; Cure Without Opening the Sinus, by Robert Levy, M.D. (Reprint from the *Laryngoscope.*)

Prognosis of Laryngeal Tuberculosis, by Robert Levy, M.D. (Reprint from *Journal American Medical Assn.*)

The Tuberculosis Crusade and Its Problems, by Chas. Denison, A.M., M.D. (Reprint from *Journal of Tuberculosis.*)

Is There a Tubercular Diathesis? by Chas. T. McClintock, M.D., Ph.D. (Reprint from the *Physicians and Surgeons.*)

Why Some Severe Cases of Appendicitis End in Recovery Without Operation, by J. H. Carstens, M.D. (Reprint from *N. Y. Medical Journal.*)

The Milk Supply of Cities; Can It Be Improved? by Henry O. Marcy, A.M., M.D., LL.D. (Reprint from *Journal Amer. Med. Assn.*)

The Reconstruction of the Pelvic Structures Incident to Lesions of Perineum, by Henry O. Marcy, A.M. M.D., LL.D. (Reprint from *Journal Amer. Med. Assn.*)

The Aseptic Animal Suture; Its Place in Surgery, by Henry O. Marcy, A.M., M.D., LL.D. (Reprint from *Journal Amer. Med. Assn.*)

The Treatment of Forty-Three Cases of Typhoid Fever With No Deaths and With Complications in But One Case, by Edward C. Seifert, M.D. (Reprint from *N. Y. Medical Journal.*)

Genito-Urinary Cases, by F. Kreissl, M.D. (Reprint from *Chicago Medical Courier.*)

Cystoscopy in the Male; Preliminary Report Upon a New Instrument, by T. C. Witherspoon, M.D. (Reprint from MEDICAL REVIEW.)

The Etiology and Classification of Cystitis, by N. Senn, M.D., Ph.D., LL.D. (Reprint from *International Clinic*, Vol. II., Eighth Series.)

Membranous Tonsillitis and Pharyngitis of Influenza, by Rosa Engleman, B.A., M.D. (Reprint from *Annals of Gynecology and Pediatrics*, August Number, Vol. XII.)

Atypic Malaria in Children, With a Case in Point, by Rosa Engleman, B.A., M.D. (Reprint from *Memphis Lancet.*)

Genito-Urinary Cases, by F. Kreissl, M.D. (Reprint from *Chicago Medical Recorder*).

Why is the Gonorrhea Still a Much Dreaded Disease? by F. Kreissl, M.D. (Reprint from *Chicago Medical Recorder.*)

My Experience With the Galvano Caustic Treatment of Prostatic Hypertrophy, by F. Kriessl, M.D. (Reprint from *Chicago Clinic*).

Gonorrheal Urethro-Cystitis in the Male, by F. Kreissl, M.D. (Reprint from *American Jour. Surgery & Gynecology.*)

Cystitis Faveolata, by F. Kriessl, M.D. (Reprint from *Medicine*).

Surgical Anatomy of the Lymphatic Channels of the Upper Extremity, by Willard Bartlett, A.M., M.D. (Reprint from *St. Louis Courier of Medicine*)

Neurasthenia, by John Punton, M.D. (Reprint from *Medical Index-Lancet.*)

Localized Tuberculosis of the Intestine, With Report of Seven Operated Cases, by W. J. Mayo, M.D. (Reprint from *New York Medical Jour.*)

The Esophagus, Cicatrical Structure Thereof; Its Treatment, by W. J. Mayo, M.D. (Reprint from *Journal American Medical Ass'n.*)

Some Observations on the Surgery of the Gall-Bladder and the Bile-Ducts, by Wm. J. Mayo, M.D. (Reprint from *Annals of Surgery.*)

Decortication of the Tongue in Treatment of Lingual Psoriasis, by Jas. Ransohoff, M.D. F.R.C.S. (Eng.). (Reprint from *Annals of Surgery.*)

Practical Therapeutics.

Operators' Best Help.—In Bernays' "Report of a Surgical Clinic," the patient, æt. 50, white, female. Family history: Has one sister who suffered from emotional insanity; otherwise the family history is good. Previous health excellent. The present trouble began with a severe neuralgic toothache, localized in the right lower molars. Paroxysms of pain were of daily occurrence, and most severe in the mornings about breakfast time. The pain subsided temporarily whenever the teeth were pressed firmly together or upon any substance held between them, but only to return when the pressure was withdrawn. The presence of anything cold in the mouth immediately produced the most exquisite pain; moderate heat produced a soothing effect. After two months, the pain became continuous, and four molars were extracted without in any way relieving it. She had strenuously avoided the use of narcotics, but during the more active periods of pain, antikamnia in ten-grain doses was found to be an efficacious obtunder. After describing the neurectomy, Bernays says: "Eight weeks have now elapsed since the operation, and no recurrence of the trouble has taken place."

Kellogg's Elastic Rings for securing the umbilical cord are esteemed above all other methods by those who have given it a trial. Dr. Howard Osburn, of Rippon, W. Va., writes: "Enclosed please find money order, for which send me a box of rings and applicator, and an extra box of rings for myself. The applicator with rings I wish to present to an esteemed friend, who is practicing medicine in a neighboring State. I would not give my applicator and rings for a carload of ligatures, if I was compelled to use them in ligating the funis."